habitable and sales of homes begin. 1990 Some 200 million people participate in 20th anniversary of Earth people of all ages. 1991 Environmental justice national summit of grassroots groups held in Washington, D.C.

HEALTHY ECOSYSTEMS

Ecosystems are our basic life support systems in the natural world. Region 8's mountains, canyons, forests, plains and deserts harbor dozens of unique ecosystems -- places that are home to some of the most recognizable and valued areas in the nation. Examples of familiar places where these systems thrive include: Glacier, Rocky Mountain, Zion, Black Canyon of the Gunnison, Arches and Yellowstone National Parks, Utah's Great Salt Lake, Wyoming's Thunder Basin Grassland and the Prairie Pothole Region of North and South Dakota.

Ecosystems Under Pressure

While the march of progress has raised our standard of living, it has also stretched the health of our ecosystems to their limits. Since the early 1800s, human activities have significantly altered natural systems. Region 8 has lost large portions of its native wetland, riparian, forest and prairie habitats to agriculture, mining, residential and commercial development, and water management practices. Many species have suffered as a consequence.

While still some of the most diverse and intact systems in our nation, Region 8's ecosystems are under pressure. Large tracts of open space characterize much of our Region's land area; however, the ecosystems found in these areas are being affected by habitat fragmentation and destruction, and by the pollution of the environments plants and animals need to survive.

Aquatic ecosystems are also being impacted. Seven major river systems, including the Colorado, Missouri and Arkansas, begin in Region 8. These river systems are famously manipulated to provide drinking water, irrigation, flood control, power generation and other benefits. Water quality changes and the elimination of habitats linked to these once free-flowing rivers have been significant. Surface waters are particularly vulnerable to pollution from agriculture, mining and water capture/ transport systems. Cumulatively, these pressures have affected communities of fish, birds, insects and plants.

Regulatory Roles

EPA's regulatory responsibilities related to ecosystems are largely encompassed in two laws: the Clean Water Act (CWA) and the National Environmental Policy Act (NEPA). Under the CWA, EPA provides support to state agencies to restore and protect rivers and lakes so they can support healthy aquatic communities. The CWA also includes provisions for protecting surface waters and wetlands from the impacts of development projects. EPA reviews and comments on permit applications submitted to the Army Corps of Engineers in order to ensure compliance with these provisions and to minimize environmental impacts. Region 8's wetlands program also provides grants -- over $1.5 million in 1999 -- to states, tribes and local governments for wetlands assessment and restoration projects.

Day. EPA becomes the lead federal agency to promote, support and encourage environmental education for 1992 35,000 people from 178 countries attend the United Nations Earth Summit in Rio de Janeiro. 1993 EPA

NEPA

Our regional NEPA team has been nationally recognized for its work. In collaboration with other EPA programs and federal agencies, Region 8 staff provided critical analysis that prevented construction of the potentially disastrous New World Mine just a few miles from Yellowstone National Park. The project represented a threat to surface and groundwater and the ecosystems that depend on them. To compensate the mining company for its investment loss, EPA's team initiated a first-of-its-kind agreement where the firm was compensated and the site was acquired by the U.S. Forest Service.

NEPA requires federal agencies to identify and consider the environmental impacts of their actions. EPA independently reviews environmental impact statements (EISs) and offers technical assistance and recommendations to other agencies and the President's Council of Environmental Quality. Because a large part of Region 8 is federally owned and managed land, NEPA activities are critical to protecting ecosystems. Region 8 staff reviews and comments on dozens of EISs each year.

Arches National Park, Utah. Region 8 is home to some of the most scenic and ecologically unique places in the nation.

EPA's efforts to clean up waste sites through the Superfund program also contribute to ecosystem restoration. In Leadville, Colorado, the cleanup of hundreds of acres of contaminated mine waste is leading to improvements in the Upper Arkansas River. For the first time in years, trout are returning to stretches of the river in waters that were once contaminated with heavy metals.

The decline of the bison, in many ways a symbol of the West's natural abundance, serves as testimony to human impacts on ecosystems. Today, a small fraction of the once millions of bison survive in the western U.S.

Enforcement Activities

EPA's enforcement activities also play an important role in ecosystem protection and restoration. For example, Region 8 is increasingly incorporating supplemental environmental projects (SEPs) focused on ecosystem restoration into case settlements. Enforcement work related to Superfund sites is also leading to improvements. Recent highlights include:

• In 1992-1993, an oil pipeline discharged thousands of gallons of oil into Camas Creek on the Flathead Indian Reservation in Montana, causing damage to wildlife, grasses and aquatic plants. In 1999, Region 8 reached a settlement where the responsible companies paid a $165,000 penalty and restored the area. The companies also committed to a $130,000 supplemental environmental project to construct fish passageways on the Jocko River.

Wetlands

Wetlands are among the most productive ecosystems in the world, comparable to coral reefs and rainforests. They provide critical wildlife habitat, filter and improve water quality, store water during floods, and slowly release rain, snowmelt, groundwater and floodwaters. Wetlands are home to nearly one-third of the nation's endangered or threatened species, a testimony to their importance and their decline. Region 8's wetland habitats include marshes, wet meadows, fens, riparian and rare alpine wetlands, and the famous "pothole" wetlands of the plains. These "pothole" wetlands are one of North America's most productive habitats, generating over half the continent's ducks and 15% of its waterfowl population, and supporting over 200 species of migratory birds.

EPA's review and comments on a wetlands permit in Arvada, CO helped local leaders save a pristine urban wetland from development. Instead of being filled in and paved over, the wetlands became Two Ponds National Wildlife Refuge.

reports secondhand smoke poses a serious health risk to nonsmokers. EPA implements strategy governing 22% in 1993. 1994 The American bald eagle is upgraded from an endangered to threatened species. President

Estimated Wetland Losses 1780's - 1980's

State	Acres in 1780	Acres in 1980	% Loss
CO	2,000,000	1,000,000	50%
MT	1,147,000	840,300	27%
ND	4,927,500	2,490,000	49%
SD	2,735,100	1,780,000	35%
UT	802,000	558,000	30%
WY	2,000,000	1,250,000	38%
Total	13,611,600	7,918,300	42%

Source: U.S. Fish and Wildlife Service

Historical wetlands losses in Region 8 have been significant.

EPA's community-based approach has invested heavily in places like the San Miguel watershed in western Colorado. This photo shows wetlands restoration work in the watershed.

This project is intended to restore the threatened bull trout population and preserve one of Montana's genetically pure populations of cutthroat trout.

• EPA's litigation against the ARCO mine near Silver Bow Creek -- a tributary of the Clark Fork River in Montana -- is also leading to significant restoration activities. EPA stepped in to begin restoring the severely polluted area in 1995 with an extensive cleanup plan. In 1999, EPA obtained a settlement in which ARCO paid $80 million to clean up the Superfund site. Additional penalties, damage payments and cleanup costs totaled over $160 million, supporting continued cleanup activities and restoration projects, such as the construction of 1,600 acres of wetlands in the area. Residents are planning for trails and fishing spots along the reviving stream.

Community-Based, Voluntary Protection

While not a direct regulatory activity, EPA's community-based approach to environmental protection is a cornerstone in ensuring healthy and sustainable ecosystems. The approach relies on local organizations to build consensus in communities as they identify and solve environmental problems. Where local environmental goals correspond to EPA's broad statutory goals, EPA offers communities technical and financial support.

Since 1992, EPA has worked intensively on both small- and large-scale ecosystems. For example, Region 8 is employing the community-based approach to watershed restoration and mine waste issues in the Clear Creek watershed near Denver. In partnership with other agencies and organizations, EPA has realized water quality improvements in Clear Creek that far surpass what could have been accomplished through regulatory approaches alone. Current large-scale, geographic initiatives are now underway in the Upper Missouri River Basin and the Colorado Plateau.

Greenback Cutthroat Trout. By the early 1900s, habitat loss, water diversions, unregulated fishing pressure and the stocking of non-native trout greatly reduced the distribution and abundance of the native cutthroat trout in Colorado. Recovery efforts for the federally threatened greenback have brought it back and expanded its range so that it has been downlisted from "endangered" to "threatened."

A Focal Point for Place-Based Protection: The Missouri River Basin

The Missouri is the longest river in the U.S., traversing all or parts of 10 states and 28 Indian reservations. The Upper Missouri basin's aquatic resources are highly threatened. Six major dams and reservoirs have drastically altered seasonal flow patterns, the diverse habitat of its formerly rich flood plain has been largely lost, and water quality is impaired by agricultural runoff. Region 8 is coordinating with partners across the Missouri and Mississippi basins -- using regulatory and non-regulatory methods -- to promote ecosystem protection and restoration in this priority place. Basin stakeholders are working together on an integrated approach to assessing and protecting aquatic resources.

hazardous waste incinerators and industrial furnaces. Curbside recycling triples from 7% in 1970 to nearly Clinton orders government agencies to make environmental justice part of their mission. Superfund cleanups